

# REPORT DOCUMENTATION PAGE

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1. REPORT DATE (DD-MM-YYYY)

2. REPORT TYPE

Technical Papers

3. DATES COVERED (From - To)

4. TITLE AND SUBTITLE

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5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

5d. PROJECT NUMBER

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5e. TASK NUMBER

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5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Air Force Research Laboratory (AFMC)  
AFRL/PRS  
5 Pollux Drive  
Edwards AFB CA 93524-7048

8. PERFORMING ORGANIZATION  
REPORT

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Air Force Research Laboratory (AFMC)  
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ACRONYM(S)

11. SPONSOR/MONITOR'S  
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12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for public release; distribution unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

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17. LIMITATION  
OF ABSTRACT

18. NUMBER  
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19a. NAME OF RESPONSIBLE  
PERSON

Leilani Richardson

19b. TELEPHONE NUMBER

(include area code)  
(661) 275-5015

a. REPORT

b. ABSTRACT

c. THIS PAGE

Unclassified

Unclassified

Unclassified

A

Standard Form 298 (Rev. 8-98)  
Prescribed by ANSI Std. Z39.18

36 Separate items are enclosed

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MEMORANDUM FOR PRS (Contractor Publication)

FROM: PROI (STINFO)

20 October 2000

SUBJECT: Authorization for Release of Technical Information, Control Number: **AFRL-PR-ED-AB-2000-225**  
Miller, Tim, "An Experimental Investigation of Cracking Along a Liner-Propellant Interface"

**JANNAF 34<sup>th</sup> Structures & Mechanical Behavior Subcommittee Meeting**  
**(Cocoa Beach, FL, 20-26 Mar 2001) (Deadline: 03 Nov 2000)**

(Statement A)

1. This request has been reviewed by the Foreign Disclosure Office for: a.) appropriateness of distribution statement, b.) military/national critical technology, c.) export controls or distribution restrictions, d.) appropriateness for release to a foreign nation, and e.) technical sensitivity and/or economic sensitivity.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

2. This request has been reviewed by the Public Affairs Office for: a.) appropriateness for public release and/or b) possible higher headquarters review

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

3. This request has been reviewed by the STINFO for: a.) changes if approved as amended, b.) appropriateness of distribution statement, c.) military/national critical technology, d.) economic sensitivity, e.) parallel review completed if required, and f.) format and completion of meeting clearance form if required

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

4. This request has been reviewed by PRS for: a.) technical accuracy, b.) appropriateness for audience, c.) appropriateness of distribution statement, d.) technical sensitivity and economic sensitivity, e.) military/national critical technology, and f.) data rights and patentability

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

APPROVED / APPROVED AS AMENDED / DISAPPROVED

PHILIP A. KESSEL  
Technical Advisor  
Missile & Space Propulsion Division

Date

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12<sup>th</sup> Nondestructive Evaluation Subcommittee (NDES)  
21<sup>st</sup> Rocket Nozzle Technology Subcommittee (RNTS)  
34<sup>th</sup> Structures & Mechanical Behavior Subcommittee (S&MBS)  
Joint Meeting  
26-20 March 2001  
Doubletree Oceanfront Hotel, Cocoa Beach, Florida

ABSTRACT

Title of Paper: An Experimental Investigation of Cracking along a Liner-Propellant Interface

Author(s): Timothy C. Miller

Is this paper an update? , Yes , No.

Has it been presented elsewhere? , Yes , No.

The fracture of a liner-propellant interface is studied experimentally using a tensile testing apparatus and videotape equipment. Additional experimental methods are used to supplement the conclusions derived from this testing, and computational modeling of the specimens is also performed. The fracture of the bimaterial is governed by the mode mixity and the properties of the constituents, and may involve crack growth along the interface or branching of the crack away from the interface, depending on the specific conditions.

Liner or